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## XXII.

**HARD WATERS SOFTENED BY A FARINACEOUS SOAP, WITH THE  
PROCESS FOR MAKING THE SAME.**

By Rev. DANIEL LITTLE, F. A. A.

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*Wells, May, 1787.*

IT is well known, that the waters from many springs and wells, not only in populous cities on the sea coast, but in many parts of the country remote from sea water, are hard and unfit for washing. And so great are the advantages of soft and pure water for washing, bleaching, &c. that any method, by which rough and hard water may be rendered more fit for use, if only in the laundry, may deserve some notice, and lead the way to farther experiments.

My well for family use has been dug about thirty years. It is four miles from the sea and twenty rods from a salt water river ; fifteen feet in depth ; the bottom of which is eight feet above the tide at high water mark. This well has afforded a plenty of water in the driest seasons ; but so unfit for washing, that we have always been dependent on the rain or snow for that purpose. Not far distant from this well there are some large pans and deep beds of iron ore, to which we have in part ascribed the bad quality of the water. But of late we have used a different kind of soap, by which the water of this well is rendered nearly equal to river or rain water for washing linen. The soap is made without oil or animal fat ; in lieu of which we use about the same quantity of the fine meal of indian corn, or other farinaceous substances.

The process is very simple. The quantity of meal must be in proportion to the quantity and strength of the lie. If the lie will bear an egg, let the quantity of meal be near the same, that is commonly used in making water gruel, or such quantity as the lie will fully dissolve; and most intimately incorporate with itself. Mix the meal first with cold lie, to the consistence of a thin paste; then pour the same into the pot or kettle of boiling lie, which you intend for soap, so gradually, that the boiling may be discontinued as little as possible; then let it boil three or four hours, and when cold it will appear much like common soft soap.

Although the hardness of some other waters may arise from different causes, to which this soap may not have so great an affinity; yet the poor, who often have good water, but a scarcity of oil or animal fat, may avail themselves of a new and easy process for making soap, fit for almost every family use. Although it will not lather like the soap made with grease, yet for washing and bleaching linens, for scouring floors and wooden utensils of the kitchen and dairy, it has been found equal to any other kind of soap. As the aqueous part of this soap will more easily evaporate, than that, which is made with animal fat, let it be well covered, and kept in a cool place. A little experience will ascertain its utility, and perhaps suggest new and more useful improvements.